# GFB VTA

## Installation Instructions

## Part # T9467

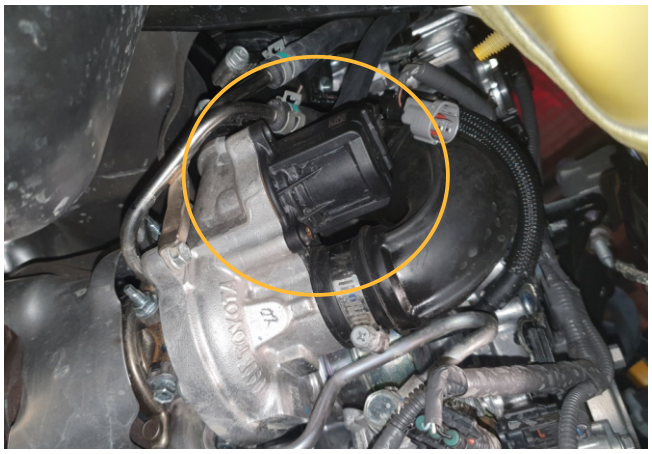
*Suits Toyota/Lexus*

# OEM DIVERTER REMOVAL/DISASSEMBLY

***Transverse Engines***
***(e.g Toyota C-HR with 8NR-FTS):***

The OEM diverter valve is found on the front of the turbo, which is down low, between the engine and firewall. Access in this case is from underneath the car.

**Use of a vehicle hoist, ramps or axle stands is required - do NOT work under a vehicle supported only by a jack.**



***Longitudinal Engines***
***(e.g Lexus IS200t with 8AR-FTS):***

The OEM diverter valve is mounted on the front of the turbo, on the side that is closest to the engine. DV+ installation can usually be performed from above, but due to the tight location it is usually necessary to remove the turbo intake pipe, or use a flexible driver attachment to access the screws.

***Factory Diverter Disassembly:***

Pull the piston and spring out of the body (⇨), then remove the o-ring (keep the o-ring safe, it will be re-used in the DV+ installation).

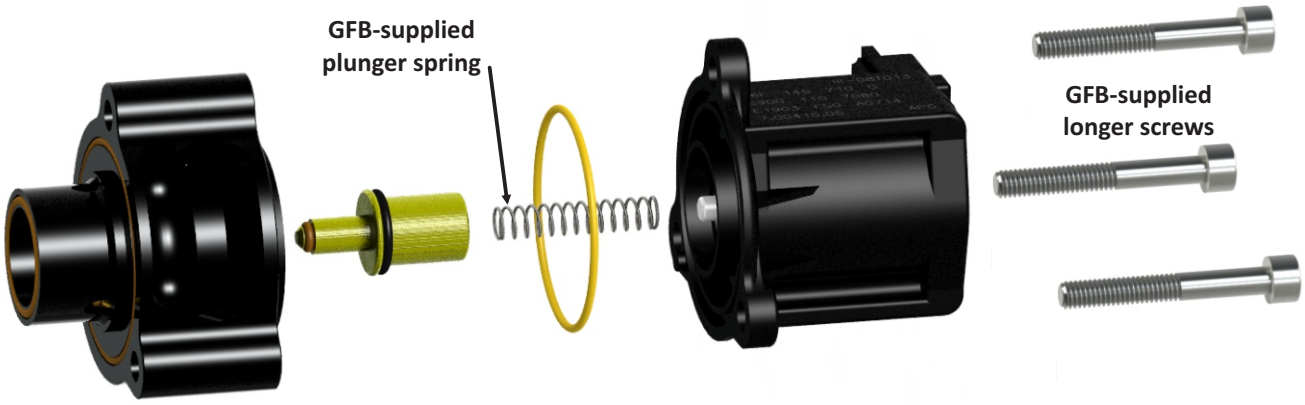
**PLEASE NOTE: The remaining black plastic protrusion and blue piston ring MUST BE REMOVED before you continue (➡).**

Note that this plastic protrusion is thin and brittle, and damage may occur if levered directly. If it breaks, you'll still be able to continue with the DV+ installation as this part isn't used, but you won't be able to re-install the factory diverter again.

One method to remove without damage is to install a hose clamp over the plastic protrusion as shown, then lever the clamp instead of the plastic.

# DV+ INSTALLATION

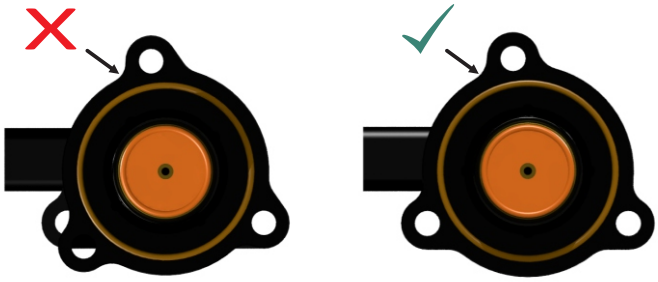
Insert the GFB supplied plunger spring (**DO NOT re-use the factory spring**) and plunger into the solenoid, and check that it slides freely. Now fit the VTA body and factory yellow o-ring onto the plunger/spring/solenoid assembly as shown below:




The VTA body will usually "snap" onto the solenoid to make the assembly easier to install.

Sometimes, variations in the solenoid's moulded plastic can prevent it from holding itself together, in which case it simply needs to be held together by hand until it is bolted to the turbo.


Note that the bolt holes are NOT SYMMETRICAL. When you assemble the VTA onto the solenoid, check the alignment of the holes - if they do not line up properly, rotate the VTA body until the bolt holes line up correctly before continuing.



Install the VTA assembly onto the turbo using the supplied longer screws. Because of the asymmetric bolt holes, the assembly can only be installed in one orientation.

Clip the electrical connector back on, and replace any other parts that were removed during installation.

# NOTES ON VTA OPERATION

***Oily Residue:*** It is normal to find some oil around the atmosphere outlet, which is from the oil vapour recirculated through the turbo intake by the PCV. This does not indicate a fault with the VTA.

***Venting Duration/Timing:*** You might hear the VTA vent at seemingly odd times, but this is determined by the ECU and is not a fault with the VTA. The ECU may turn on the solenoid to vent the diverter under conditions such as when traction or stability control activates, under certain cruise conditions, or even briefly during seemingly steady-state throttle. It is important to understand that the ECU determines diverter opening based off the movement of the *throttle,* not the accelerator pedal - the throttle does not always do what the pedal tells it to!

The good news is that unlike the factory diverter that opens fully whenever the ECU tells it to, the VTA uses the ECU signal AND boost pressure to determine when to open. This means it only opens if the ECU tells it to AND there is actually boost pressure in the intercooler that needs to be vented, rather than opening unnecessarily.

As an added benefit, the VTA's method of operation is easier to live with on a daily basis compared to products or modifications that vent the factory diverter to atmosphere (like a BOV "spacer"), as you will generally only hear the VTA when you drive like you mean it. A factory valve vented to atmosphere however will vent even if you only drive gently.

# WARRANTY

***WARNING:***
GFB recommends that only qualified motor engineers fit this product. GFB products are engineered for best performance, however incorrect use or modification may cause damage to or reduce the longevity of the engine/drive-train components.

***GFB LIFETIME WARRANTY:***
Our commitment to quality means that when we put our name to something, we are also staking our reputation on it. That's why we back our products with the best warranty in the business!

You should expect a lifetime of use from a well-engineered product, so if your GFB product fails as a result of defective materials or faulty workmanship whilst you remain the original owner, we will repair or replace it (limited only to the repair or replacement of GFB products provided they are used as intended and in accordance with all appropriate warnings and limitations. No other warranty is expressed or implied).

If a fault occurs as a result of usage outside of the terms of the warranty, or you are not the original owner, fear not, we can still help you. You should never need to throw a GFB product away, as spare parts are available and won't cost the earth.

***TECH SUPPORT:***
We want you to get the best advice, first time. That's why our engineers are available to answer any technical questions you may have. Head to www.gfb.com.au/contact-us to get in touch.